

3A4

POWER AMPLIFIER PENTODE

MINIATURE TYPE

Filament	Coated		
Filament Arrangement	*Series* *	*Parallel***	
Voltage	2.8	1.4	d-c volts
Current	0.1	0.2	amp.
Direct Interelectrode Capacitances:°			
Grid to Plate	0.34 max.		μμf
Input	4.8		μμf
Output	4.2		μμf
Maximum Overall Length			2-1/8"
Maximum Seated Height			1-7/8"
Maximum Diameter			3/4"
Bulb			T-5-1/2
Base▲			Miniature Button 7-Pin

Pin 1 - Fil. (- series)
Pin 2 - Plate
Pin 3 - Screen
Pin 4 - Grid
Pin 5 {Fil. Mid-Tap (- parallel)
Pin 6 - Plate
Pin 7 - Filament +

BOTTOM VIEW (7BB)

RCA Socket	Stock No. 9914
Mounting Position	Any

Maximum Ratings Are Design-Center Values

A-F POWER AMPLIFIER

Plate Voltage	150 max.	volts
Screen Voltage	90 max.	volts
Plate Dissipation	2.0 max.	watts
Screen Dissipation	0.4 max.	watt
Total Zero-Sig. Cathode Current■	18 max.	ma.

Typical Operation and Characteristics-Class A_1 Amplifier:●

Filament Arrangement	*Parallel* **		
Plate Voltage	135	150	volts
Screen Voltage	90	90	volts
Grid Voltage	-7.5	-8.4	volts
Peak A-F Grid Voltage	7.5	8.4	volts
Zero-Sig. Plate Current	14.8	13.3	ma.
Max.-Sig. Plate Current	14.9	14.1	ma.
Zero-Sig. Screen Current	2.6	2.2	ma.
Max.-Sig. Screen Current	3.5	3.5	ma.
Plate Resistance	90000	100000	ohms
Transconductance	1900	1900	μmhos
Load Resistance	8000	8000	ohms
Total Harmonic Distortion	5	6	%
Max.-Sig. Power Output	600	700	mw

R-F POWER AMPLIFIER

D-C Plate Voltage	150 max.	volts
D-C Screen Voltage	135 max.	volts
D-C Grid Voltage	-30 max.	volts
D-C Plate Current	20 max.	ma.
D-C Grid Current	0.25 max.	ma.
Total D-C Cathode Current ■	25 max.	ma.
Plate Input	3 max.	watts
Screen Input	0.9 max.	watt
Plate Dissipation	2 max.	watts

*, **, o, ▲, ■, ● : See next page.

← Indicates a change.

RCA VICTOR DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY





POWER AMPLIFIER PENTODE

(continued from preceding page)

→ *Typical Operation at 10 Mc with Parallel Filament Arrangement:***

D-C Plate Voltage	150	volts
D-C Screen Voltage	135	volts
Grid Resistor	0.2	megohm
D-C Plate Current	18.3	ma.
D-C Screen Current	6.5	ma.
D-C Grid Current	0.13	ma.
Power Output (approx.)	1.2	watts

* Filament voltage applied across the two sections in series between pins No.1 and No.7. Grid voltage is referred to pin No.1.

** Filament voltage applied across the two sections in parallel between pin No.5 and pins No.1 and No.7 connected together. Grid voltage is referred to pin No.5.

o With no external shield.

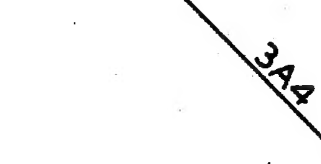
■ For series-filament operation. A shunting resistor must be connected across the section between pins No.1 and No.5 to by-pass excess cathode current in this section. The value of the shunting resistor should be adjusted to make the voltage across the shunted section equal to the voltage across the section between pins No.5 and No.7. When other tubes in series-filament arrangement contribute to the filament current of the 3A4, an additional shunting resistor may be required between pins No.1 and No.7.

● Typical operating values for the 3A4 with filament sections in series will be approximately the same as those shown for parallel-filament operation.

▲ *The center hole in sockets designed for this base provides for the possibility that this tube type may be manufactured with the exhaust-tube tip at the base end. For this reason, it is recommended that in equipment employing this tube type, no material be permitted to obstruct the socket hole.*

← Indicates a change.





3A4



AVERAGE PLATE CHARACTERISTICS

E_f = 1.4 VOLTS SCREEN VOLTS = 90
PARALLEL FILAMENT ARRANGEMENT

CONTROL-GRID (I_{C1}) MILLIAMPERES
5 0

CONTROL-GRID VOLTS E_{C1} = 0

+9 +6 +3 -3 -6 -9 -12 -15 -18

E_{C1} = +12 +9 +6 +3

E_{C1} = 0

I_b I_{C2} I_{C1}

PLATE VOLTS
0 50 100 150 200 250 300 350

50 40 30 20 10 0
PLATE (I_b) OR SCREEN (I_{C2}) MILLIAMPERES

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RCA RADIOTRON DIVISION
RCA MANUFACTURING COMPANY, INC.

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